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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,277	04/21/2004	Akihiro Ohno	252094US2	5431
22850	7590	10/23/2007		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER BOEHLER, ANNE MARIE M	
			ART UNIT 3611	PAPER NUMBER
			NOTIFICATION DATE 10/23/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/828,277

Applicant(s)

OHNO ET AL.

Examiner

Anne Marie M. Boehler

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 24 July 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-5,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-5,7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glab (USPN 6,450,921).

Glab teaches a four wheel drive vehicle with a switch control means 40 and a gradual switching control means for gradually decreasing the torque the transmission is transmitting before switching mode. Glab fails to specifically refer to a means for determining a difference between present torque and target torque. However, some means for determining the difference between a present torque and a target torque is required for the operation of the control system, such that the controller initiates a control function when the difference exceeds a predetermined value. When the target and present values are the same the controller would not initiate a change, whereas, when the difference exceeds a predetermined value (which can be some nominal value), the control operation would begin, in order to change the present value to the target value. Without this control function, which is conventional, the controller would be inoperable. Therefore, it would have been obvious to one of ordinary skill in the art to provide the Glab control system with a means for determining the difference between present and target torque values, in order to effectively operate the control system..

3. Claims 4, 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi in view of Glab.

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Takahashi teaches a four-wheel drive system with a mode switching control 21 means and a switching inhibiting means that prevents a mode change from occurring based on front to rear wheel speed difference and vehicle speed.

Takasaki teaches providing lamps in the driver compartment of the vehicle to indicate various conditions. It would have been obvious to one of ordinary skill in the art to similarly signal to the driver the four-wheel drive mode state, in order to inform the driver of the current drive mode.

Takahashi lacks a means for gradually decreasing the torque the transmission is transmitting before switching mode. Takasaki teaches providing blinking lamps to indicate various conditions.

Glab teaches a four-wheel drive vehicle with a switch control means 40 and a gradual switching control means for gradually decreasing the torque the transmission is transmitting before switching mode.

It would have been obvious to one of ordinary skill in the art to provide the Takahashi system with a means for gradually decreasing torque before switching mode, as taught by Glab, in order to effect smooth transition between modes. Regarding claims 7 and 8, it would have been obvious to one of ordinary skill in the art to provide a blinking light to indicate to the driver when mode selection is being inhibited or the gradual control operation is active, in order to notify the driver of the present driving condition. It would also have been obvious to provide a means for determining a difference between target and present torques, as discussed above, in order to effectively operate the control system.

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4. Applicant's arguments filed January 22, 2007 have been fully considered but they are not persuasive.

Applicant argues that Glab fails to teach a control to switch the drive mode from a two wheel drive mode to a four wheel drive mode. He points out that the Glab system controls the transfer clutch during a torque release strategy, that is, release from a four wheel drive mode to a two wheel drive mode. However, applicant's claims do not recite the exact subject matter that applicant is arguing. In claim 2, lines 6-8, applicant claims a "switching control means" that controls the drive power transmission to switch from a two-wheel drive mode to a four-wheel drive mode. The claim does not indicate that the switching control means only switches from two to four wheel drive and not from four to two wheel drive. Applicant's disclosed invention includes a control means that switches the transmission both ways. Then, in lines 12-16, applicant claims a gradual switching control means "to gradually change" (not increase or decrease) the torque transmitted by the transmission device. Applicant no longer claims a decrease in the torque transmission (as in previous claim recitations), but it also does not specify the operation is only for the two to four wheel drive transition, whereby the torque would be increased. Also, the operation of the gradual switching control means is not specifically tied to the two-to-four wheel switching operation of the switching control means. Therefore, Glab's gradual transfer strategy relating to transfer from a four to two wheel drive mode meets applicant's claim language, as discussed above.


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne Marie M. Boehler whose telephone number is 571-272-

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6641. The examiner can normally be reached on 7:30-5:00, Monday-Thursday, and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-272-6612. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 11/15/07
Anne Marie M Boehler
Primary Examiner
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